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NDOW (1997b)

JOB PROGRESS REPORT

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Job Title: Region II Stream and River Management
Job Title: Stream Fish Population Management
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SUMMARY

A resurvey of fish populations in Jack Creek and Jenny Creek was conducted to provide baseline information prior to the replacement of a culvert barrier with a bridge. The culvert had created anupstream migration barrier for fish seeking to enter Jack Creek drainage since 1993. Comparing putative redband trout population estimates with estimates last made in 1992, there was a 92 % abd 83 % decrease in trout numbers in Jack and Jenny Creeks, respectively. No bull trout were found at sampled sites in 1997 whereas, one had been sampled from a Jack Creek site in 1992. The combination of the culvert barrier and flushing springtime flows in 1993 may have resulted in the paucity of trout in 1997. The annual resurvey of surveyed sites following removal of the barrier is recommended to track the trout population.

OBJECTIVE

To conduct a fish population survey of Jack Creek in the Jarbidge River Drainage to delineate the relative abundance of native fish prior to the planned removal of a culvert barrier.

BACKGROUND

The culvert located at the lower Jack Creek road crossing was slated for replacement during Fall, 1997 with a prefabricated bridge. The existing culvert was installed in Fall, 1993 by Elko County to replace a culvert that was damaged during the springtime runoff. The current culvert was identified as a migration barrier by personnel during a Bull Trout Task Force meeting held on July 28, 1994. According to Idaho BLM records, the Jack Creek culvert was a complete upstream trout migration barrier on July 21, 1981. The Nevada Division of Wildlife conducted fish population and

stream habitat surveys along Jack Creek in 1992.

PROCEDURES

A Dirigo backpack electroshocker was used to resample four sites along the lower 3 miles of Jack Creek that were found to have fish present in 1992. There was an additional site, SS-1B surveyed before we realized the original SS-1 was upstream away. The original SS-1 was resurveyed and denoted as SS-1A. Another site located on Jenny Creek above the Jack Creek confluence was also resurveyed. Each sample site (SS) was 100 feet in length. General stream habitat characteristics were noted at each SS. Stream discharge was estimated using width and depth measurements and timed float estimates through a one-meter length of stream. All captured fish were measured for total and fork length (mm).

FINDINGS

Only at SS-2 in Jack Creek and at SS-1 in Jenny Creek were redband trout found. One redband trout was spot-shocked above SS-1B. A catchable-sized and a sub-catchable-sized redband trout were captured at SS-2 in Jack Creek and another three redband trout were seen but eluded capture. The redband trout captured in Jenny Creek was of a subcatchable size as was the trout spot-shocked above SS-1B in Jack Creek. The mean length of captured redband trout was 119.5 mm (FL). The expanded redband trout population in Jack Creek is only 143 trout. In 1992, the expanded population of redband trout over the estimated 2.7 miles of lower Jack Creek was 1709. Hence, the 1997 redband trout population represents a 91.6 % decrease from the 1992 estimated population. Likewise, the Jenny Creek redband trout estimate at SS-1 reflected a 83.3 % decrease. In 1992 there was only one bull trout sampled in Jack Creek whereas, in 1997 there were no bull trout captured or seen. In conclusion it would seem that high flows in spring of 1993 may have substantially washed-out resident fish and subsequent repopulation of trout has been impossible due to the culvert barrier.

Stream flow in Jack Creek was estimated at 1.9 cfs at SS-2 and 2.1 cfs at SS-4 on August 27. Stream channel conditions at SS-3 were such that recent (1993) high flows created boulder-rubble banks with only scattered surviving alders present along one bank. At SS-4 streambanks were up to 6 ft. high and unstable. Exposed, high streambanks were also noted at SS-2. The stream channel at SS-1 in Jenny Creek was downcut about 10 ft. Aquatic macro-invertebrates found included the following: stoneflies (Perlidae spp.); mayflies (3 spp.); caddisflies (Brachycentridae and Limnephilidae); planaria and dipteran larvae. A dead river otter was found on debris at Jack Creek SS-1A on September 29.

RECOMMENDATION

Jack and Jenny Creeks should continue to be monitored annually to determine if the fish populations recover after the removal of the culvert fish barrier.